

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (currently amended) A yeast cell comprising a nucleic acid sequence encoding a ~~modified~~, mutated, heterologous G protein-coupled receptor (~~GPCR~~), wherein the ~~modification comprises a mutation~~ is in an intracellular domain of the G protein-coupled receptor ~~and results in an improved functional response and a cell-based assay as~~ , said mutation improving the function of said heterologous G protein-coupled receptor by causing it to couple more efficiently with a heterotrimeric G protein compared to a wild-type form of the heterologous G protein-coupled receptor, and wherein the ~~modified~~ mutated G protein-coupled receptor is selected from the group consisting of a muscarinic acetylcholine receptor, a cholecystokinin CCKB receptor, a somatostatin receptor, an alpha 2A adrenergic receptor, and a serotonin receptor.

2. (currently amended) The yeast cell according to claim 1, wherein the ~~modification~~ mutation promotes agonist stimulated growth, and wherein the agonist is a G protein-coupled receptor agonist.

3. (currently amended) The yeast cell according to claim 2, wherein the ~~modification~~ mutation results and improved coupling between receptor and a chimeric G protein or failure of the receptor to interact with cell desensitization or sequestration-internalization machinery or proper plasma membrane localization.

4. (previously presented) The yeast cell according to claim 1, wherein the mutation is a deletion.

5. (previously presented) The yeast cell according to claim 4, wherein the deletion is a point mutation.

6. (previously presented) The yeast cell according to claim 4, wherein the deletion is in the third intracellular loop of the G protein-coupled receptor.

7. (previously presented) The yeast cell according to claim 6, wherein the G protein-coupled receptor is selected from the group consisting of a muscarinic acetylcholine receptor, a cholecystokinin CCKB receptor, and an alpha 2A adrenergic receptor.

8. (withdrawn) The yeast cell according to claim 1, wherein the serotonin receptor is Ce 5HTR.

9. (previously presented) The yeast cell according to claim 1, wherein the muscarinic acetylcholine receptor is a rat M3 muscarinic acetylcholine receptor or a *D. melanogaster* muscarinic acetylcholine receptor.

10. (withdrawn) The yeast cell according to claim 1, wherein the cholecystokinin CCKB receptor is a rat cholecystokinin CCKB receptor.

11. (withdrawn) The yeast cell according to claim 1, wherein the somatostatin receptor is a rat somatostatin receptor subtype 3.

12. (withdrawn) The yeast cell according to claim 1, wherein the alpha 2A adrenergic receptor is a human alpha 2A adrenergic receptor.

13. (currently amended) The yeast cell according to claim 6, wherein ~~the deleted third intracellular loop~~ following the deletion the third intracellular loop is 44 amino acids in length.

14. (withdrawn) The yeast cell according to claim 11, wherein a sequence Gln-Trp-Val-Gln-Ala-Pro-Ala-Cys (SEQ ID NO:15) is deleted from the third intracellular loop of the mutant G protein-coupled receptor.

15. (withdrawn) A yeast cell comprising a nucleic acid sequence encoding a chimeric G protein-coupled receptor, wherein the chimeric G protein-coupled receptor comprises a first heterologous G protein-coupled receptor in which an intracellular domain has been replaced with a modified intracellular domain of a second heterologous G protein-coupled receptor, and wherein the modified intracellular domain of the second heterologous G protein-coupled receptor confers an improved functional response to the chimeric G protein coupled-receptor in a cell-based assay as compared to a wild-type form of the first heterologous G protein-coupled receptor.

16. (withdrawn and currently amended) The yeast cell according to claim 46 15, wherein the modified intracellular domain is the third intracellular loop.

17. (withdrawn and currently amended) The yeast cell according to claim 1 or 46 15, further comprising a plasmid comprising an inducible reporter gene.

18. (withdrawn and currently amended) The yeast cell according to claim 20 17, wherein the reporter gene is a green fluorescent protein.

19. (withdrawn and currently amended) The cell according to claim 24 18, wherein the green fluorescent protein is operably linked to a *FUS2* promoter.

20. (currently amended) A method for screening compounds capable of binding to G protein-coupled receptors comprising:

(a) subjecting the yeast cell according to claim 1 or 46 15 to a test compound;
and

(b) measuring the effect of the test compounds on cell growth.

21. (currently amended) A yeast cell comprising a heterologous G protein-coupled receptor, wherein the G protein-coupled receptor has a deletion in an intracellular domain ~~that results in an improved functional response of the G protein-coupled receptor in a cell-based assay~~ , said deletion improving the function of said

heterologous G protein-coupled receptor by causing it to couple more efficiently with a heterotrimeric G protein as compared to a wild-type form of the heterologous G protein-coupled receptor.

22. (currently amended) The yeast cell according to claim ~~27~~ 21, wherein the ~~modification~~ deletion promotes agonist stimulated growth, and wherein the agonist is a G protein-coupled receptor agonist.

23. (currently amended) The yeast cell according to claim ~~28~~ 22, wherein the ~~modification~~ deletion results in improved coupling between the heterologous G protein-coupled receptor and a heterotrimeric G protein or failure of the heterologous G protein-coupled receptor to interact with cell desensitization or sequestration-internalization machinery or proper plasma membrane localization.

24. (currently amended) The yeast cell according to claim ~~27~~ 21, wherein the intracellular domain is the third intracellular domain.

25. (withdrawn and currently amended) The yeast cell according to claim ~~27~~ 21, wherein the heterologous G protein-coupled receptor is modified at the carboxy terminal tail of the G protein-coupled receptor.

26. (withdrawn and currently amended) The yeast cell according to claim ~~33~~ 25, wherein the modified G protein-coupled receptor is a neurotensin receptor.

27. (withdrawn and currently amended) The yeast cell according to claim 35 26, wherein the neurotensin receptor is a rat neurotensin NT1 receptor.

28. (currently amended) A method for screening compounds capable of binding to G protein-coupled receptors comprising:

- (a) subjecting the yeast cell according to claim 27 21 to a test compound; and
- (b) measuring the effect of the test compound on yeast cell growth.

29. (currently amended) The yeast cell according to claim 6, wherein the deletion is the IC3Δ deletion.